

LONG ISLAND BOTANICAL SOCIETY NEWSLETTER

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PRELIMINARY ATLAS OF THE FERNS & FERN ALLIES OF LONG ISLAND, NY

*In memory of
Joseph Beitel
1952-1991*

*Former Vice-President
Long Island Botanical Society*

Introduction

Long Island (LI) has a remarkably rich fern flora, especially considering the sandy quality of the island's soil. Altogether, 76 different taxa (kinds) of ferns and fern allies occur on LI, including 50 taxa of true ferns, 15 club-mosses, 2 spike-mosses, 3 quillworts, and 6 horsetails. Any taxonomic unit is called a taxon (pl. taxa), including species, subspecies, variety, and hybrid.

In 1970 Joe Beitel worked as a Park Interpreter for Suffolk County's Dept. of Parks. One of his tasks was to inventory the flora of various parks, and during this process he began collecting data on the ferns and fern allies of Suffolk County. After several years of fieldwork Joe assimilated his records into a draft manuscript; but his graduate studies at The University of Michigan coupled with work on the fern flora of Oaxaca, Mexico, left his Suffolk Co. fern project on the back burner.

When Joe passed away in 1991 the Flora Committee of the LI Botanical Society already had been working on a Flora of Long Island for several years. It seemed appropriate at that time to concentrate efforts

upon a fern flora in memory of Joe. A small group of the Flora Committee (including Skip Blanchard, Steven Clemants, Barbara Conolly, Carol Johnston, Eric Lamont, Allan Lindberg, Lois Lindberg, and Betty Lotowycz) began work on a fern atlas.

The production of this preliminary atlas has been a two step process. First, historical collections and reports were incorporated into a database; secondly, the current status of each taxon was determined by field searches (this second step continues to be an on-going project).

Members of the committee first recorded their own observations and collections. Joe Beitel's personal records were obtained from the NY Botanical Garden,

via Dr.
John
Mickel.
Members
then
visited
various
herbaria
throughout
NY, and
hand-
copied
label data
from
historical
collections
dating
back to the
1870's.
The
herbaria
that were



Dryopteris carthusiana (Vill.) H.P. Fuchs

visited include: Brooklyn Botanic Garden (BKL), NY Botanical Garden (NY), NY State Museum (NYS), Planting Fields Arboretum Herbarium (OBPF), and other smaller, private and institutional herbaria on LI. The NY Flora Association provided a \$500 grant to assist with this aspect of the project.

After historical data had been collected, it was determined that certain areas of LI had been neglected by botanists in the past, resulting in gaps in the

PROGRAMS

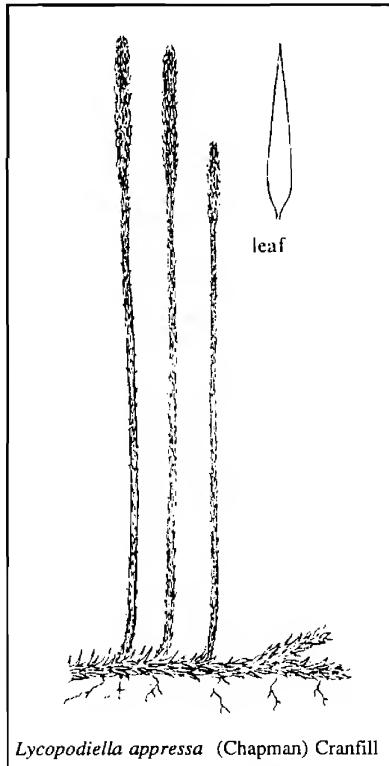
See back page and insert for details.

distribution of species. Therefore, two seasons (1992 & 1993) were spent in the field, filling in the distribution maps with updated records.

Nomenclature and taxonomy strictly follow Flora of North America, volume 2 (1993), although members of the committee did not always agree with some of the generic limitations presented in that monumental work (for example, the recognition of *Pseudolycopodiella* as a distinct genus). However, in an effort to standardize names and taxonomic concepts, we followed FNA.

Summary

Of the 50 taxa of true ferns historically known from LI, 33 are currently known to persist. Curly Grass Fern (*Schizaea pusilla*) is probably Long Island's rarest fern; other rare species with extant populations include Blunt-lobed Grape Fern (*Botrychium oneidense*), Fragile Fern (*Cystopteris fragilis*), Oak Fern (*Gymnocarpium dryopteris*), and Adder's Tongue Fern (*Ophioglossum pusillum*). Several other rare LI ferns have not been recently observed: Climbing Fern (*Lygodium palmatum*), Leathery Grape Fern (*Botrychium multifidum*), Dwarf



Lycopodiella appressa (Chapman) Cranfill

Grape Fern (*Botrychium simplex*), Clinton's Wood Fern (*Dryopteris clintoniana*), Northern Beech Fern (*Phegopteris connectilis*), and Rusty Cliff Fern (*Woodsia ilvensis*). Three fern species are not native to LI: Water Fern (*Azolla caroliniana*), naturalized in the Peconic River and probably introduced from discarded aquaria; Water-clover (*Marsilea quadrifolia*) a very rare introduction at wetlands in Islip Township; and Ostrich Fern (*Matteuccia struthiopteris* var. *pensylvanica*), escaped from cultivation and not naturalized.

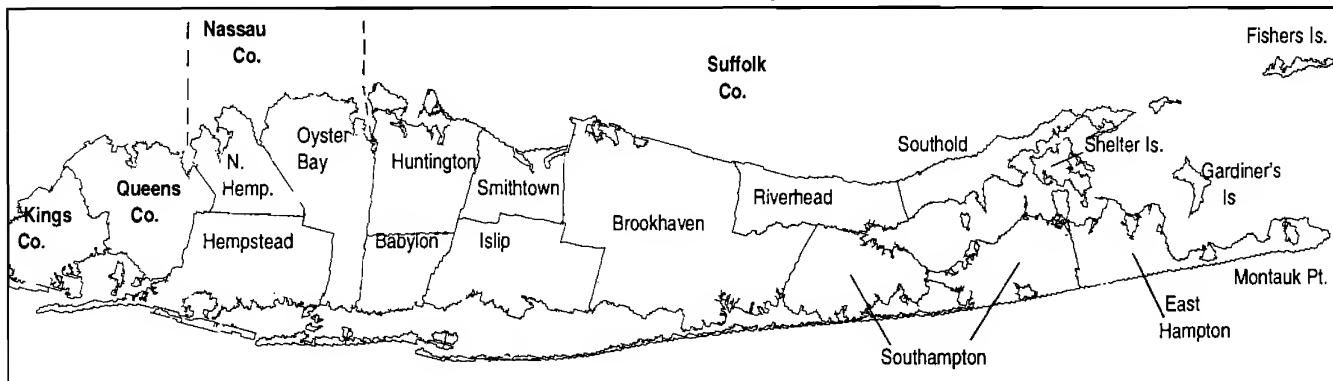
Of the 15 taxa of club-mosses historically known from LI, 10 are currently known to persist. Carolina Club-moss (*Pseudolycopodiella caroliniana*) is LI's rarest club-moss with one population. LI's two species of spike-moss still persist, but are very rare. Only one species of quillwort, and only two species of horsetail are currently reported from LI.

What you can do to help

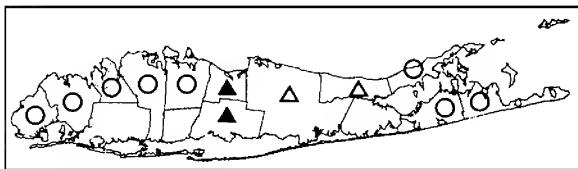
The ferns and fern allies of LI, NY, have been of interest to botanists for over 100 years, and historical collections reveal a very rich diversity of species and hybrids. A flora of the ferns and their allies of LI has never been published, and this preliminary atlas is the first step towards that goal. We would like to emphasize that this preliminary atlas is just that - preliminary! It is our hope that this will stimulate field work by members of the LI Botanical Society, to obtain a more complete record of the current status of ferns and their allies. Many species have not been recently observed on LI, and many historical records need to be updated. As you hike around Long Island during the next year or two, please keep a watchful eye out for ferns, club-mosses, spike-mosses, horsetails, and quillworts; and if you can help the flora committee update their records please send us a postcard or give us a telephone call with your discoveries.

Continued on page 25

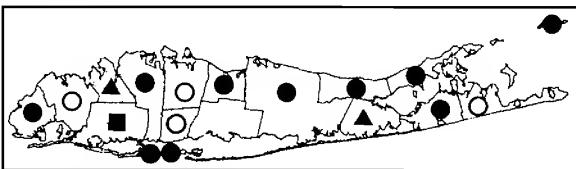
Map of the counties, towns and other regions of Long Island



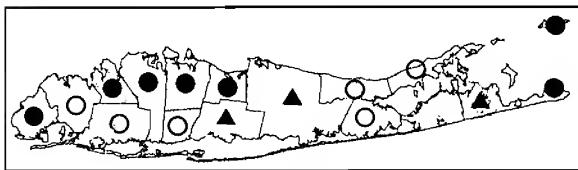
True Ferns



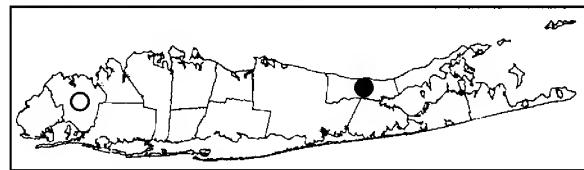
Adiantum pedatum L.
NORTHERN MAIDENHAIR



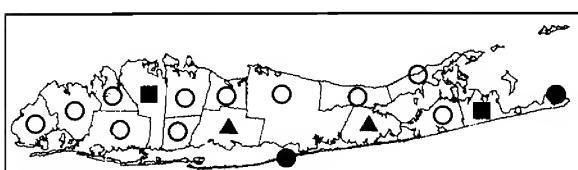
Asplenium platyneuron (L.) BSP.
EBONY SLEENWORT



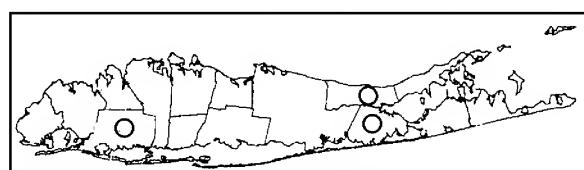
Athyrium filix-femina (L.) Mert.
var. *asplenioides* (Michx.) Farw.
[*A. asplenioides* (Michx.) Desv.]
SOUTHERN LADY FERN



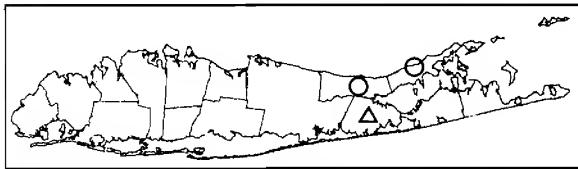
Azolla caroliniana Willd
[*Azolla filiculoides* Lam. of NY reports]
MOSQUITO FERN



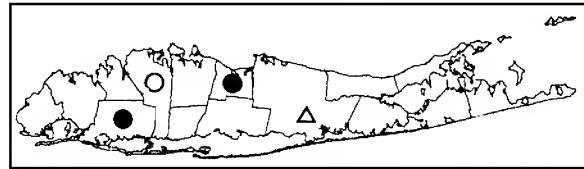
Botrychium dissectum Spreng.
DISSECTED GRAPEFERN



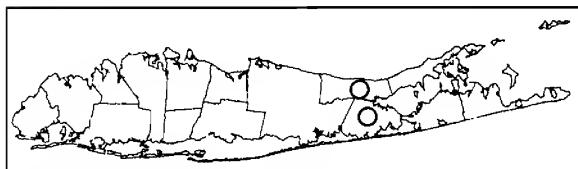
Botrychium matricariifolium (Döll) A. Braun ex
Koch
DAISY-LEAF MOONWORT



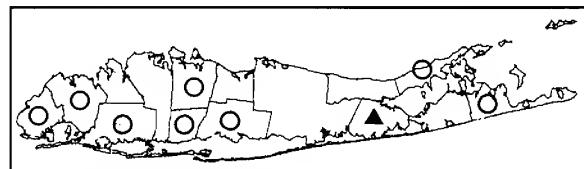
Botrychium multifidum (Gmel.) Rupr.
LEATHER GRAPEFERN



Botrychium oneidense (Gilb.) House
BLUNT-LOBED GRAPEFERN

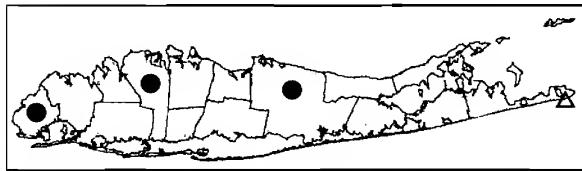


Botrychium simplex E. Hitch.
LEAST MOONWORT

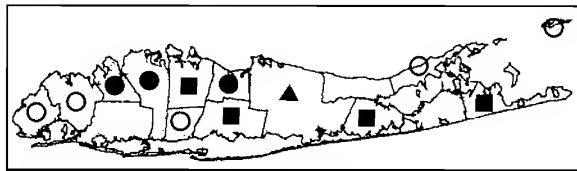


Botrychium virginianum (L.) Swartz
RATTLESNAKE FERN

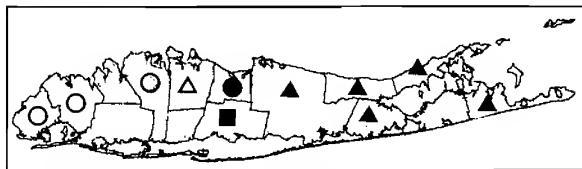
True Ferns



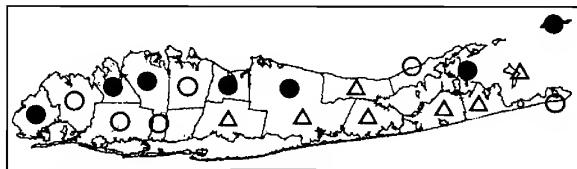
Cystopteris fragilis (L.) Bernh.
BRITTLE FERN



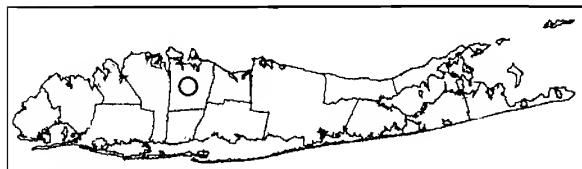
Dennstaedtia punctilobula (Michx.) T. Moore
HAY-SCENTED FERN



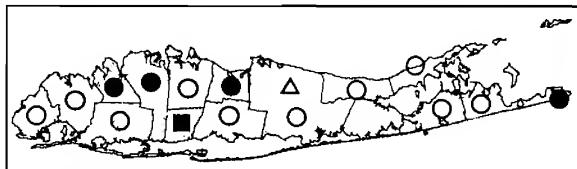
Deparia acrostichoides (Swartz) M. Kato
[*Athyrium thelypteroides*]
SILVERY-SPLEENWORT



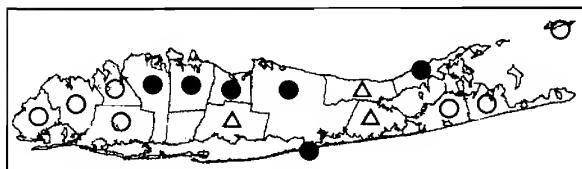
Dryopteris carthusiana (Vill.) H. P. Fuchs
[*D. spinulosa* (Muell.) Watt]
SPINULOSE WOOD FERN



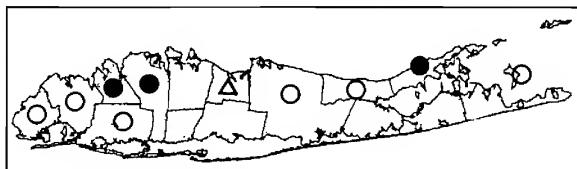
Dryopteris clintoniana (D.C. Eaton) Dowell
CLINTON'S WOOD FERN



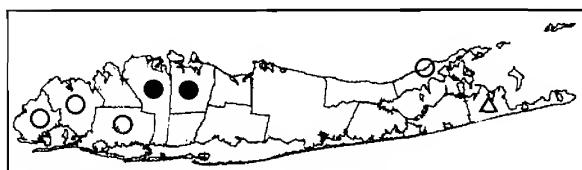
Dryopteris cristata (L.) A. Gray
CRESTED WOOD FERN



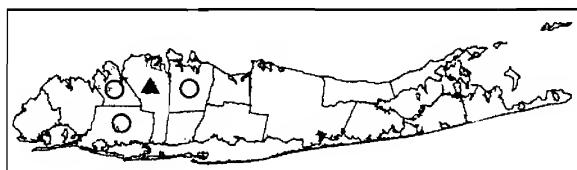
Dryopteris intermedia (Muhl. ex Willd.) A. Gray
EVERGREEN WOOD FERN



Dryopteris marginalis (L.) A. Gray
MARGINAL WOOD FERN

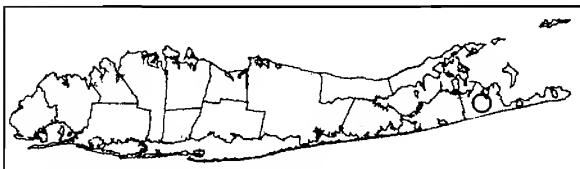


Dryopteris carthusiana × *intermedia*
[*D. × triploidea* Wherry]



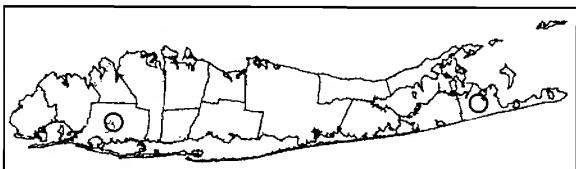
Dryopteris celsa × *cristata*
note: *D. celsa* is unknown on LI

True Ferns



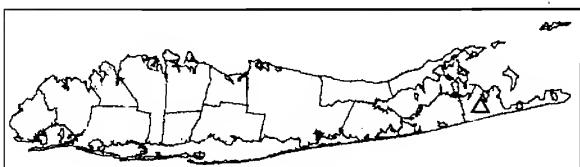
Dryopteris celsa × goldiana

note: *D. celsa* & *D. goldiana* are unknown on LI

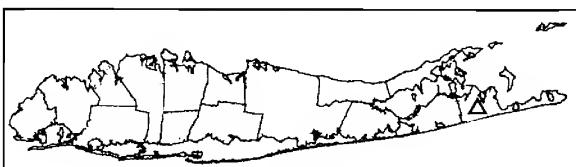


Dryopteris celsa × intermedia

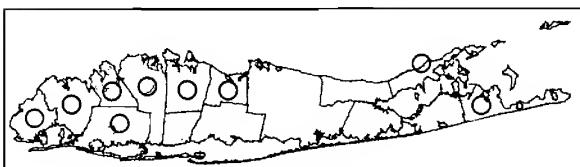
note: *D. celsa* is unknown on LI



Dryopteris clintoniana × cristata

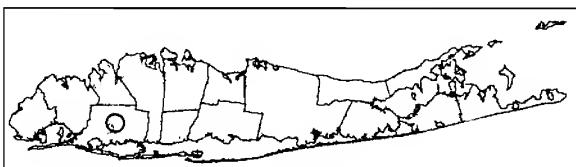


Dryopteris clintoniana × goldiana



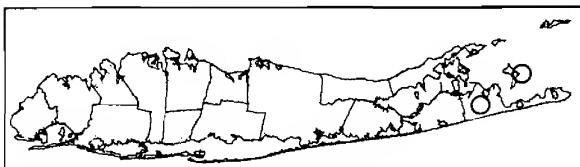
Dryopteris cristata × intermedia

[*D. × boottii* Underwood]



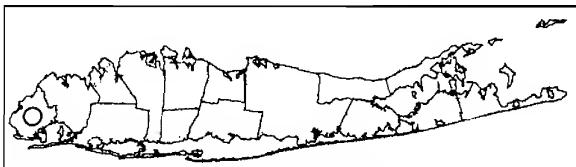
Dryopteris cristata × marginalis

[*D. × slossonae* Wherry]

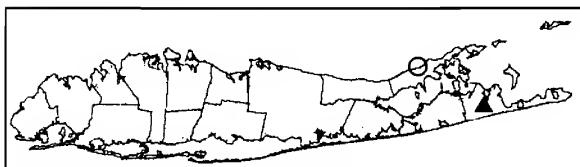


Dryopteris goldiana × intermedia

note: *D. goldiana* is unknown on LI

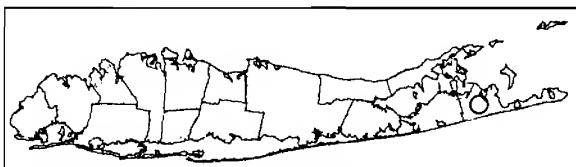


Dryopteris intermedia × marginalis



Gymnocarpium dryopteris (L.) Newman

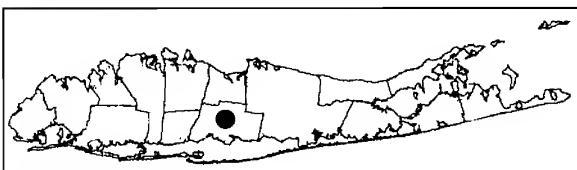
COMMON OAK FERN



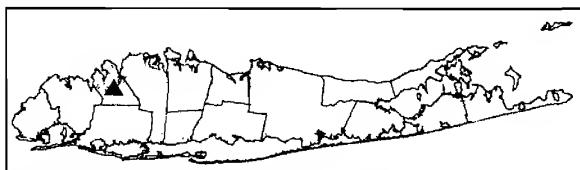
Lygodium palmatum (Bernh.) Swartz

CLIMBING FERN

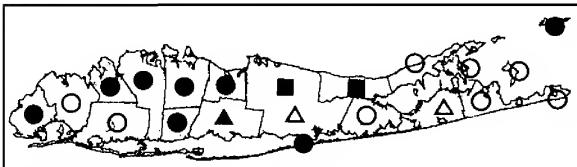
True Ferns



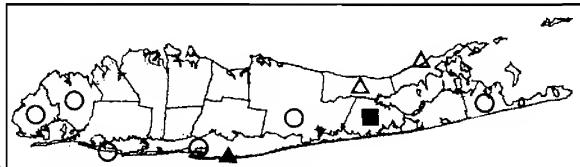
Marsilea quadrifolia L.
WATER CLOVER



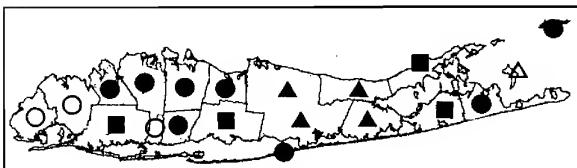
Matteuccia struthiopteris (L.) Todaro
var. *pensylvanica* (Willd.) C.V. Morton
OSTRICH FERN



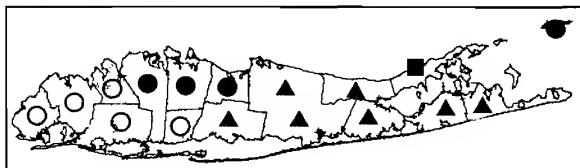
Onoclea sensibilis L.
SENSITIVE FERN



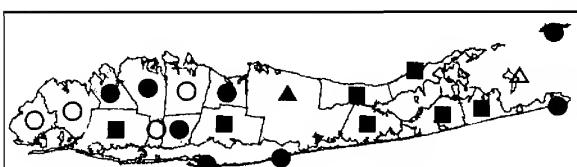
Ophioglossum pusillum Raf.
[*O. vulgatum* of LI authors]
NORTHERN ADDER'S-TONGUE



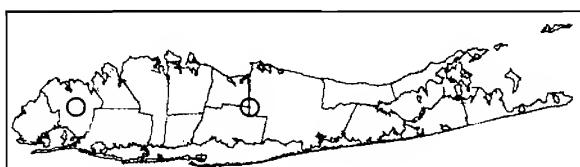
Osmunda cinnamomea L.
CINNAMON FERN



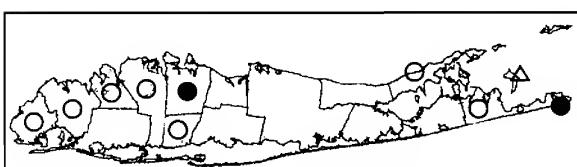
Osmunda claytoniana L.
INTERRUPTED FERN



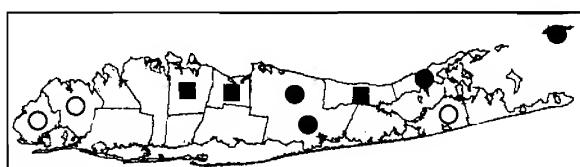
Osmunda regalis L. var. *spectabilis* (Willd.) A. Gray
ROYAL FERN



Phegopteris connectilis (Michx.) Watt
NORTHERN BEECH FERN

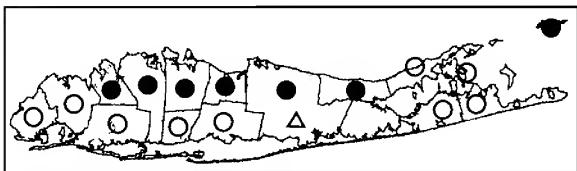


Phegopteris hexagonoptera (Michx.) Fée
BROAD BEECH FERN

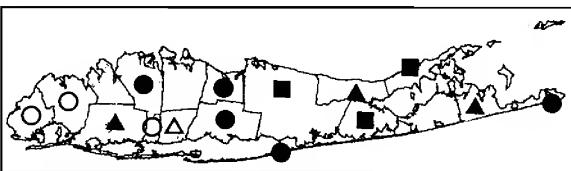


Polypodium virginianum L.
(incl. *P. appalachianum* Haufler & Windham)
ROCK POLYPODY

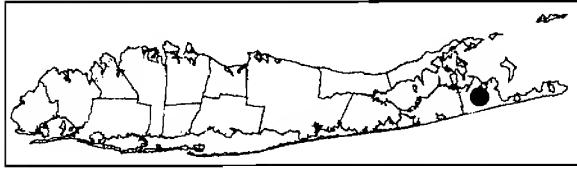
True Ferns



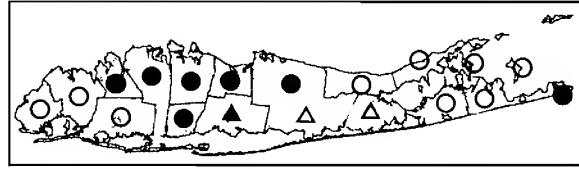
Polystichum acrostichoides (Michx.) Schott
CHRISTMAS FERN



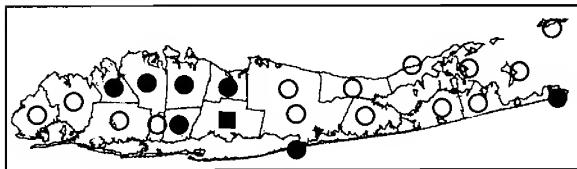
Pteridium aquilinum (L.) Kuhn
[incl. vars. *latiusculum* (Desv.) Underwood &
pseudocaudatum (Clute) A. Heller]
BRACKEN



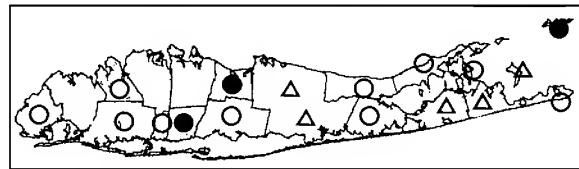
Schizaea pusilla Pursh
CURLY-GRASS FERN



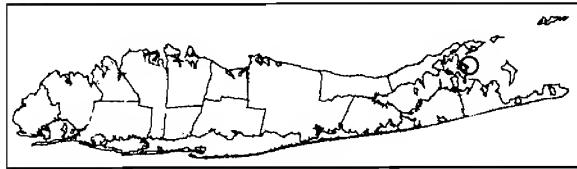
Thelypteris noveboracensis (L.) Nieuwl.
NEW YORK FERN



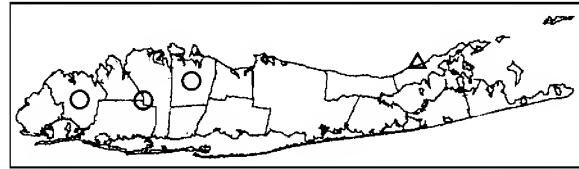
Thelypteris palustris Schott
MARSH FERN



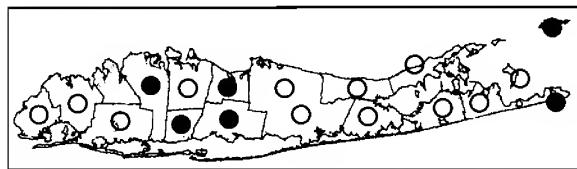
Thelypteris simulata (Davenport) Nieuwl.
MASSACHUSETTS FERN



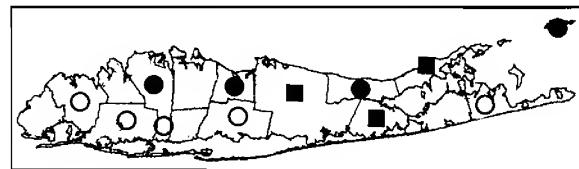
Woodsia ilvensis (L.) R. Brown
RUSTY CLIFF FERN



Woodsia obtusa (Spreng.) Torr.
BLUNT-LOBED CLIFF FERN

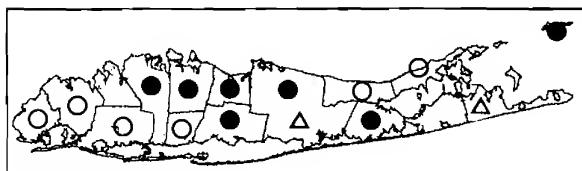


Woodwardia areolata (L.) T. Moore
Lorinseria areolata (L.) C. Presl
NETTED CHAIN FERN

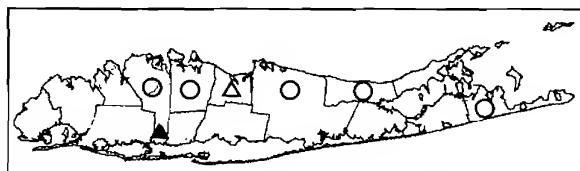


Woodwardia virginica (L.) Smith
Anchistea virginica (L.) C. Presl
VIRGINIA CHAIN FERN

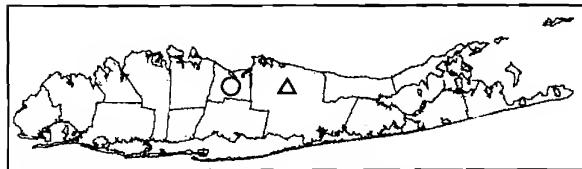
Club-Mosses



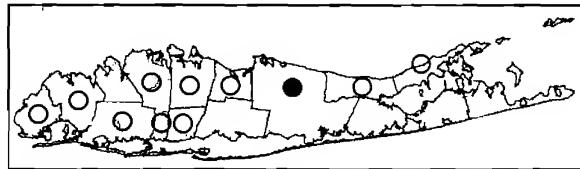
Diphasiastrum digitatum (Dill. ex A. Braun) Holub
[*Lycopodium flabelliforme* Dill. ex A. Braun]
SOUTHERN RUNNING-PINE



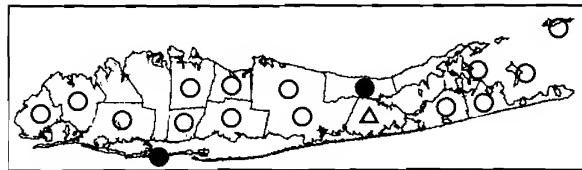
Diphasiastrum tristachyum (Pursh) Holub
[*Lycopodium tristachyum* Pursh]
BLUE GROUND-CEDAR



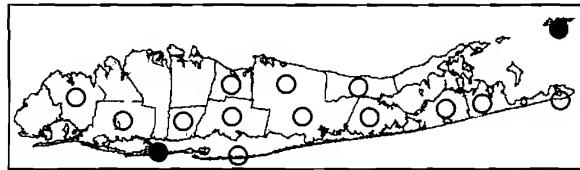
Diphasiastrum digitatum × *tristachyum*
[*D. × habererii* (House) Holub]



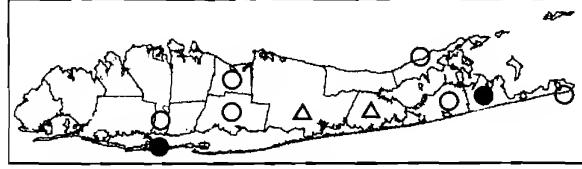
Huperzia lucidula (Michx.) Trevisan
[*Lycopodium lucidulum* Michx.]
SHINING FIR-MOSS



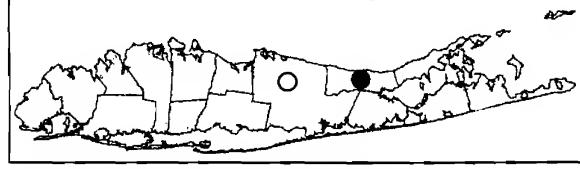
Lycopodiella alopecuroides (L.) Cranfill
[*Lycopodium alopecuroides* L.]
FOXTAIL BOG CLUB-MOSS



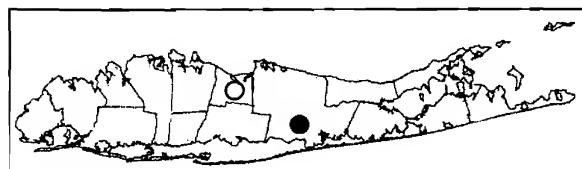
Lycopodiella appressa (Chapman) Cranfill
[*Lycopodium appressum* (Chapman) Lloyd &
Underwood]
APPRESSED BOG CLUB-MOSS



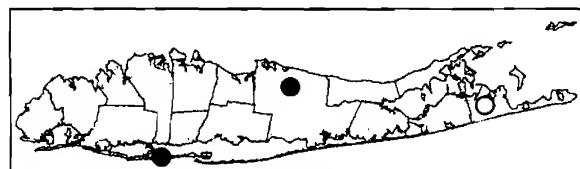
Lycopodiella inundata (L.) Holub
[*Lycopodium inundatum* L.]
NORTHERN BOG CLUB-MOSS



Lycopodiella alopecuroides × *appressa*
[*Lycopodiella × copelandii* (Eiger) Cranfill]

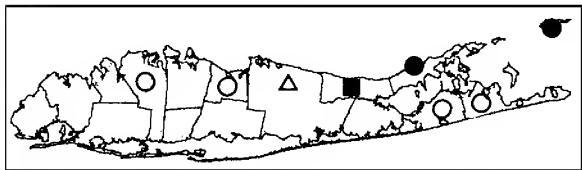


Lycopodiella alopecuroides × *inundata*

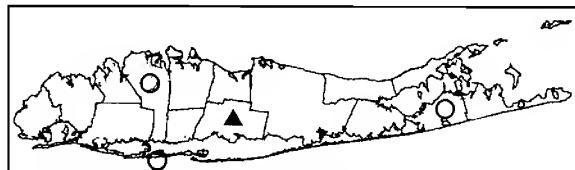


Lycopodiella appressa × *inundata*

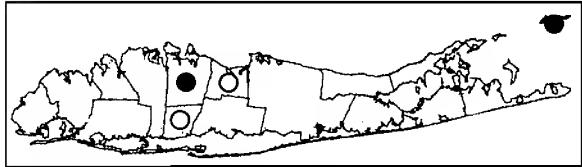
Club-Mosses



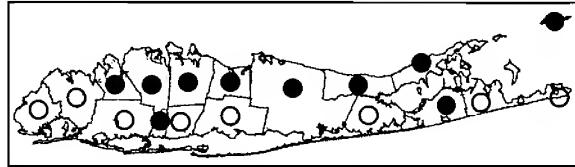
Lycopodium clavatum L.
COMMON CLUB-MOSS



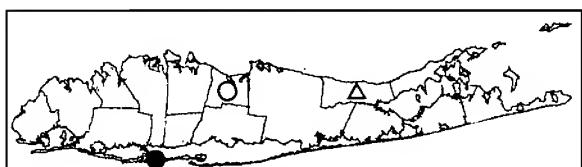
Lycopodium dendroideum Michx.
[*L. obscurum* var. *dendroideum* (Michx.)
D.C. Eaton]
PRICKLY TREE CLUB-MOSS



Lycopodium hickeyi W.H. Wagner, Beitel &
R.C. Moran
[*L. obscurum* var. *isophyllum* Hickey]
HICKEY'S TREE CLUB-MOSS

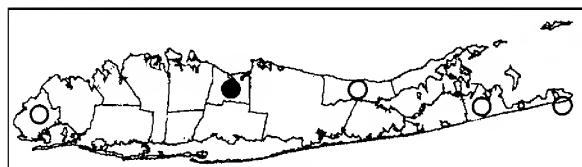


Lycopodium obscurum L.
FLAT-BRANCHED TREE CLUB-MOSS

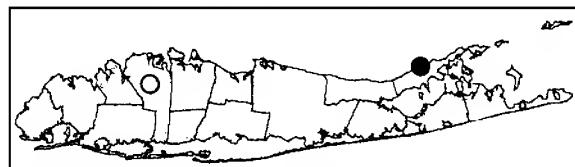


Pseudolycopodiella caroliniana (L.) Holub
[*Lycopodium carolinianum* L.]
SLENDER BOG CLUB-MOSS

Spike-Mosses

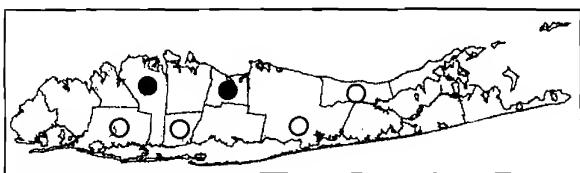


Selaginella apoda (L.) Spring
MEADOW SPIKE-MOSS

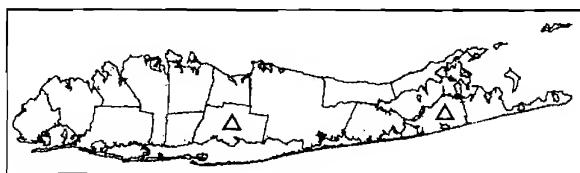


Selaginella rupestris (L.) Spring
ROCK SPIKE-MOSS

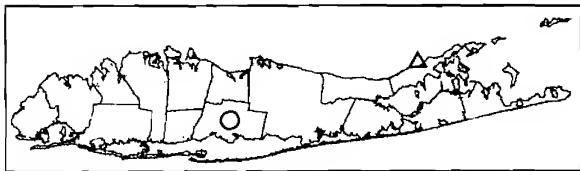
Quillworts



Isoëtes echinospora Dur.
SPINY-SPORED QUILLWORT

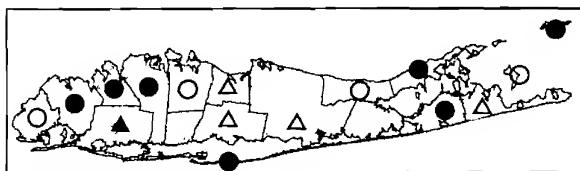


Isoëtes engelmannii A. Braun
ENGELMANN'S QUILLWORT

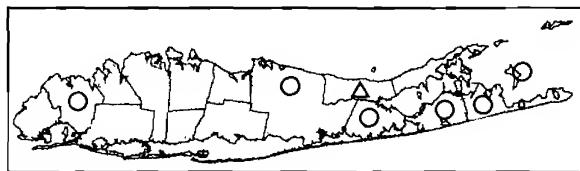


Isoëtes tuckermanii A. Braun ex Engelm.
TUCKERMAN'S QUILLWORT

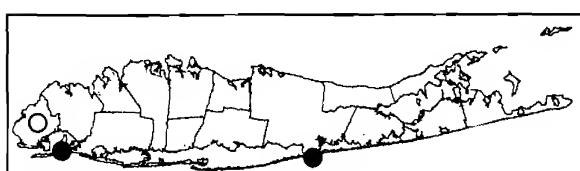
Horsetails



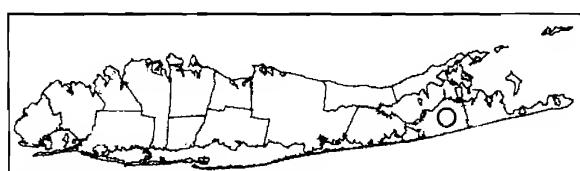
Equisetum arvense L.
FIELD HORSETAIL



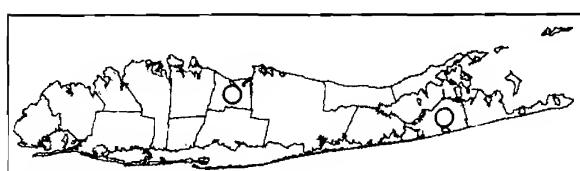
Equisetum fluviatile L.
RIVER HORSETAIL



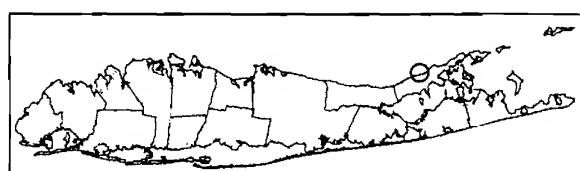
Equisetum hyemale L.
ssp. *affine* (Engelm.) Calder & Taylor
COMMON SCOURING RUSH



Equisetum pratense Ehrhart
MEADOW HORSETAIL



Equisetum sylvaticum L.
WOOD HORSETAIL



Equisetum arvense x *fluviatile*
[*E. x litorale* Kühlein]

Key to Symbols

Several symbols were used to indicate different types of data. These symbols were placed in a county or town. In places where we felt that more detail was warranted the symbols were placed in portions of towns (such as Fishers Island, Gardiners Island, Montauk Pt, E & W Southampton, N & S Brookhaven, etc.). Open symbols were used to indicate that the species was only known from before 1980, closed symbols were used to indicate that the species is known from after 1980. Circles were used to indicate a specimen was seen, triangles to indicate a report is known and a square to indicate that an old specimen is known and a recent report is known.

open symbols

(no data since 1980)

- - a specimen is known from the county, town, etc.
△ - a report is known from the county, town, etc.

closed symbols

(data since 1980)

- - a specimen is known from the town
▲ - a report is known from the town
■ - a pre-1980 specimen is known and a post-1980 report is known from the town

Notes

We have followed the new Flora North America treatment for the names of the plants. Here is a list of the names which diverge greatly from the NYS Checklist (Mitchell, 1986).

Old Name	New Name
<i>Anchistea virginica</i>	<i>Woodwardia virginica</i>
<i>Athyrium asplenioides</i>	<i>A. filix-femina</i> var. <i>asplenioides</i>
<i>Athyrium thelypteroides</i>	<i>Deparia acrostichoides</i>
<i>Azolla filiculoides</i>	<i>Azolla caroliniana</i>
<i>Lorinseria areolata</i>	<i>Woodwardia areolata</i>
<i>Lycopodium</i>	<i>Huperzia</i>
(check under these 4 genera as well as <i>Lycopodium</i>)	<i>Diphasiastrum</i> <i>Pseudolycopodiella</i> <i>Lycopodiella</i>
<i>Lycopodium flabelliforme</i> . . .	<i>Diphasiastrum digitatum</i>
<i>Lycopodium obscurum</i> var. <i>isophyllum</i>	<i>Lycopodium hickeyi</i>
<i>Ophioglossum vulgatum</i>	<i>O. pusillum</i>

Prepared by: Long Island Botanical Society Flora Committee

Society News

Meetings

March 8

Raymond Welch talked about his daily treks along the paths of Suffolk Co. Community College. He showed slides illustrating the often startling changes in the vegetation in the past 20 years.

April 12

Tom Stock showed slides of the many different glacial erratics found on Long Island. He provided historical and ecological comments along the way.

Steven Clements identified the unknown plant that blew into the LI Nature Conservation headquarters last winter as *Nigella damascena* L. (Love-in-a-mist).

Education Committee News

The LIBS educational display was exhibited on Earth Day weekend (April 23 & 24) at Heckscher State Park's Spring Celebration. A special exhibit on twig identification was also prepared by Mary Laura Lamont. It was estimated that over 10,000 visitors attended the celebration.

Executive Board Meeting

A meeting of the Executive Board will be held on 24 May 1994 at 7:15 pm (before the Flora Committee meeting), at the Planting Fields Arboretum Library. All members are welcome to attend.

Field Trips

June 25, Caumsett State Park, Lloyd Harbor. Meet 10 AM in parking lot by entrance booth. Andrew Greller, will lead this trip to help prepare a flora of Caumsett State Park. Participants should bring lunch and a beverage and be prepared for mosquitos, ticks, sun and possibly wet walking in the salt marsh. Bring a hand lens, field guides and cameras, if possible. Andy will supply checklists. There is no need to preregister.

July 9, Connetquot River State Park. Meet 9:30 AM in entrance parking lot. Chris Mangels, will lead this visit to dry uplands and wetlands along the river. Examine noteworthy species of sedges and other rare species in the wetlands. Bring lunch and beverage and be prepared for ticks, wetness and sun. Leave message with Glenn Richard at 369-4922 by June 22, including your name and phone number if you plan to attend.

LONG ISLAND BOTANICAL SOCIETY
Founded: 1986; Incorporated: 1989.

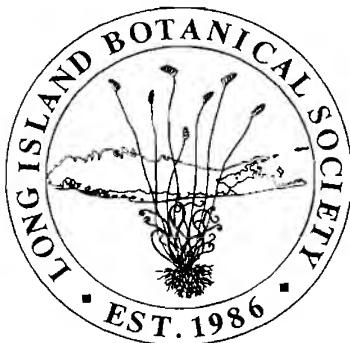
The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New

President	Eric Lamont
Vice President	Steven Clemants
Treasurer	Carol Johnston
Recrd Sec'y	Barbara Conolly
Cor'sp Sec'y	Jane Blanchard
Local Flora	Skip Blanchard
Field Trip	Glenn Richard
Membership	Lois Lindberg
Conservation	Louise Harrison
	John Turner
Education	Margaret Conover
	Mary Laura Lamont
Hospitality	Nancy Smith
	Betty Lotowycz
Program	Eric Lamont
Editor	Steven Clemants

Membership

Membership is open to all, and we welcome new members. Annual dues are \$10. For membership, make your check payable to LONG ISLAND BOTANICAL SOCIETY and mail to: Lois Lindberg, Membership Chairperson, 45 Sandy Hill Rd., Oyster Bay, NY 11771-3111

LONG ISLAND BOTANICAL SOCIETY
c/o Muttontown Preserve
Muttontown Lane
East Norwich, NY 11732



PROGRAMS

10 May 1994 - 7:30 pm*, Peter Whan, "Life on the Edge: a view from The Edge of Appalachia Preserve System of southern Ohio." Uplands Farm Nature Center, Cold Spring Harbor. For directions to Uplands Farm call 516-367-3225.

14 June 1994 - Glenn Richard has planned a special evening at The Swan Pond Biological Station of SUNY at Calverton. Activities include: nature walk, Barbeque, and an evening program on coastal plain ponds by Bruce Lund.
PLEASE SEE ENCLOSED FLIER FOR SPECIFIC INFORMATION

* Refreshments are available starting at 7:30 pm; the meeting begins at 8 pm.
